**Chemistry Test Review**

**Part 1: Naming and Chemical Formulas**

**A. Review. Give the correct chemical formula for each of the following compounds.**

*Name the following chemical compounds:*

1) NaBr \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2) H2SO3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3) P2O5 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4) Ti(SO4)2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5) FePO4 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6) K3N \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7) SO2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8) CuOH \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9) Zn(NO2)2 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10) V2S3 \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

11) HBr \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12) H2SO4\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Write the formulas for the following chemical compounds:*

11) silicon dioxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12) nickel (III) sulfide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

13) manganese (II) phosphate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

14) carbonic acid \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

15) diboron tetrabromide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

16) hydroiodic acid \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

17) potassium carbonate \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

18) ammonium oxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

19) tin (IV) selenide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

20) carbon tetrachloride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part 2: Balancing and Types of Reactions**

1. sulfur + oxygen → sulfur dioxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

2. zinc + sulfuric acid → zinc sulfate + hydrogen \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

3. hydrogen + nitrogen → ammonia (NH3) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

4. hydrogen + chlorine → hydrogen chloride \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

5. carbon + water → carbon monoxide + hydrogen \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

6. calcium oxide + water → calcium hydroxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

7. phosphorus + oxygen → diphosphorus pentoxide \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

8. hydrochloric acid + sodium hydroxide → sodium chloride + water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

9. barium chloride + sulfuric acid → barium sulfate + hydrochloric acid \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

10. aluminum sulfate + calcium hydroxide → aluminum hydroxide + calcium sulfate \_\_\_\_\_\_\_\_\_\_\_\_

11. ethane (C2H6) + oxygen → carbon dioxide + water \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

12. aluminum oxide → aluminum + oxygen \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Part 3: Predicting Reactions (you may leave as a skeleton equation)**

1. Aluminum metal reacts with an aqueous solution of calcium nitrate.
2. Chlorine gas reacts with aqueous calcium bromide
3. Tin is combined with a dilute solution of iron (II) sulfate
4. Iodine is combined with aqueous sodium hydroxide
5. Cobalt is added to hydrochloric acid.
6. Zinc reacts with Iron (II) nitrate
7. Nickle is added to an aqueous solution of magnesium nitrate
8. Sodium carbonate is mixed with potassium
9. Copper (I) is mixed with Gold acetate (Au(CH3COO)3)
10. Lithium metal is placed in water.

**Part 5: Other concepts**

**Define: Acid, Base, pH.**

**pg. 252 #1, 12, 18, 26, 28**

**pg 258 #2-7, 8 (just give balanced chemical equation), 9 (do not need to explain), 11, 13, 15, 16, 17, 22**

**Answers Part 1**

*Name the following chemical compounds:*

1) **sodium bromide**

2) **sulfurous acid**

3) **diphosphorus pentoxide**

4) **titanium(IV) sulfate**

5) **iron(III) phosphate**

6) **potassium nitride**

7) **sulfur dioxide**

8) **copper(I) hydroxide**

9) **zinc nitrite**

10) **vanadium(III) sulfide**

**11) hydrobromic acid**

12) **sulfuric acid**

*Write the formulas for the following chemical compounds:*

11) **SiO­2**

12) **Ni2S3**

13) **Mn3(PO4)2**

14) **H2CO3**

15) **B2Br4**

16) **HI**

17) **K2CO3**

18)  **(NH4)2O**

19) **SnSe2**

20) **CCl4**

**Answers Part 2**

1. S8 + 8O2 → 8SO2 combustion

2. Zn + H2SO4 → ZnSO4 + H2 single displacement

3. 3H2 + N2 → 2NH3 synthesis

4. H2 + Cl2 → 2HCl synthesis

5. C + H2O → CO + H2 Single displacement

6. CaO + H2O → Ca(OH)2 synthesis

7. P4 + 5O2 → 2P2O5 combustion

8. HCl + NaOH → NaCl H2O neutralization

9. BaCl2 + H2SO4 → BaSO4 + 2HCl double displacement

10. Al2(SO4)3 + 3Ca(OH)2 → 2Al(OH)3 + 3CaSO4 neutralization

11. 2C2H6 + 7O2 → 4CO2 + 6H2O combustion

12. 2Al2O3 → 4Al + 3O2 decomposition

**Part 3 Answers**

1. NR

2. cacl2 + BR2

3. NR

4. NR

5. CoCl2 + H2

6. Zn(NO3)2 + Fe

7. NR

8. K2CO3 + NA

9. CuCH3COO + AU

10. LiOH + H2